

## Frequently Asked Questions about Wichita Falls Water 2014

### 1. Water Reuse Projects

#### [Q: What is the latest news on the Direct Potable Reuse \(DPR\) Project?](#)

A: The DPR Project went online July 9, 2014 following extensive testing by the City of Wichita Falls and the Texas Commission on Environmental Quality (TCEQ). The installation of the project was completed in late December of 2013 followed by an intense 45-day testing protocol, as required by the TCEQ, to ensure that the water would be safe to drink. Following this testing the TCEQ requested an additional 30 days of tests. They then analyzed the results and met with City leaders and staff to discuss the findings. They approved a permit for the project on June 28, 2014. This innovative project provides 5 million gallons of water per day (1/3 of our daily demand).

#### [Q: How is water used in the DPR system treated?](#)

A: The process for treating the water involves seven steps.

1. After being processed through the waste water treatment plant, the treated reuse water is disinfected and pumped from the River Road Treatment Facility to the Cypress Water Treatment Plant

2. Treat the reuse water through the Microfiltration Units

During the treatment process the reuse water will be treated with the latest technology being used to clean water, the Microfiltration Reverse Osmosis Plant (MFRO). The first step is Microfiltration. The reuse water will flow into a clarifier, similar to a conventional plant, where it is subjected to a coagulant. The reuse water will then enter the micro-filtration cell where a pump pulls the water through a fiber filled module. The pores in the fiber are so small that most of the impurities are too large to pass through, removing them before the next step in the purification process.

3. Treat the water through Reverse Osmosis

Following Microfiltration, the reuse water will be treated through Reverse Osmosis. This is the same technology that large ships use to treat sea water for human consumption, that is used on the space station and that is used in the process to manufacture silicon chips. The process forces the water through a 0.0001 micron (One micron is one-thousandth of a millimeter) semi-permeable membrane by way of water pressure but only allows water molecules to pass through the membrane. Salts and other contaminants cannot pass through the membrane and are flushed away.

4. Release the MFRO treated reuse water into a holding lagoon

5. Blend the reuse water with raw lake water on a 50-50 basis

6. Treat the blended water through conventional means

Regular raw water from the City's water source lakes, Lake Arrowhead and Lake Kickapoo, is treated once through an extensive series of steps that produce safe, clean drinking water. This is the third step of treatment for the reuse

water and entails:

- A. Treatment with Chlorine Dioxide
- B. Pre-disinfection
- C. Coagulation
- D. Softening
- E. Flocculation
- F. Sedimentation
- G. Re-stabilization
- H. Fluoridation

7. Store and pump to distribution

**Q: What about the safety and testing of the water?**

The City of Wichita Falls has for over 30 years, received the highest water rating given from the State of Texas. The Texas Commission on Environmental Quality (TCEQ) also consistently gives the City a "Superior Water System" rating, their highest rating. The TCEQ inspects the City's entire public water system each year. These inspections have consistently shown that the City's system is compliant with guidelines set forth by the TCEQ and the US Environmental Protection Agency. Ratings are based on continued compliance with Federal and State regulations governing drinking water and annual sanitary surveys conducted by a TCEQ.

In order to meet and exceed these standards the city utilizes a professional team of highly skilled, certified water operators. These water operators are certified by the State of Texas and work throughout the entire water system. Certification levels include Class A, B, C and D, with A being the highest level. Training includes a significant emphasis on science, math and safety and will continue through an operator's career. Recertification must be completed every three years. The City has a total of five Class A operators, 19 Class B and 11 Class C.

Daniel Nix, the City of Wichita Falls Water Utilities Manager, says that the City has, with the assistance of the TCEQ, developed an extensive testing protocol for the DPR Project to verify that all of the processes are doing what they are intended to do which is produce safe, clean drinking water. The testing period will last a total of 75 days. The data from the testing will result in a 6000 page report submitted to the TCEQ for their review. The water will not be released into the distribution system until approved by the TCEQ.

**2. Long Term Reuse Project-Indirect Potable Reuse**

**Q: Is the long term reuse project still going to be built?**

A: Yes. The City is aggressively pursuing a \$35 million Indirect Potable Reuse project which will ultimately take all of our treated waste water to Lake Arrowhead for storage and ultimate use. This project will recycle up to 12 to 16 million gallons per day and will take three to five years to complete. A permit application has been submitted to the TCEQ and ROW acquisition has begun.

**3. Cloud Seeding**

**Q: Did the City try to cloud seeding?**

A: Yes. The City implemented a comprehensive cloud seeding project in the spring of 2014 at a cost of \$300,000. City officials and representatives from several surrounding counties met with state meteorologist and cloud seeding expert, George Bomar, who has been working this field for over 39 years. Bomar indicated that cloud seeding can increase the potential rainfall production from a suitable thunderstorm by 10-15%. The City sought joint participation from other entities that could benefit from a cloud seeding operation to offset a portion of the expense.

**4. Water Rates**

**Q: Why are water rates expected to go up even though water use is down?**

A: The City normally sells approximately 7.6 billion gallons of water per year. In the last fiscal year, this dropped to about 5.8 billion gallons. Since the majority of City water revenues come from the actual amount of water used (volume charges) and not the base monthly (fixed) charge, it has an enormous impact on the budget. Because of this, water revenues for the last fiscal year were \$4 million below budget due to drought restrictions.

**Q: Why can't you just cut the budget to make up the difference and not raise rates?**

A: The City cut expenses where feasible, but the cuts do not come close to making up the deficit. For example, non-fixed costs (electricity, treatment chemicals, etc.) were cut by \$1 million last year because of the lower volume of water that was treated. Basically, every \$1 loss in water sales due to lower consumption reduces discretionary expenditures by only \$.25. The City also had to defer (for two consecutive years) routine water/sewer line replacement, to shave \$3 million from the budget. Fixed costs (labor, debt service on bonds, required maintenance) remain roughly the same, regardless of the amount

of water used.

**Q: So, why can't the City cut fixed costs?**

A: Water treatment facilities must be run 24/7/365 days a year with minimum staffing required by the state, no matter how much water is sold. The City is also required to pay the annual debt costs for the bonds that were issued for the numerous projects such as the micro filtration and reverse osmosis plant. Additionally, the City still has to fix broken water lines and make other emergency repairs to the system to keep it functional.

**Q: What are some of the main reasons water rates have gone up?**

A: Water rates had to be increased in order to meet unfunded state and federal mandates, supply and material price increases, fuel price increases, electricity and gas hikes.

**Q: Are you going to do anything to minimize the impact to water users?**

A: City staff is looking at modifying rate structure so that more of the fixed costs are front-loaded or reflected in the base water charge that everyone pays, even before the first gallon of water is sold. This is commonly referred to as a "readiness to serve charge." The obvious advantage of doing this is that it will flatten the "peaks and valleys" as we sell dramatically more or less water from year to year, making our revenue stream more predictable.

**Q: Why does this seem to only be happening in Wichita Falls?**

A: Rest assured, this problem is not just a Wichita Falls phenomenon. It is happening everywhere. In fact, the City of Fort Worth lost \$11 million last year because of forced drought conservation and will be adjusting their rates as a result. There was a recent article in the Texas Tribune about this very issue, <http://www.texastribune.org/2014/02/10/texans-water-conservation-reward-higher-rates/>, and from the Fort Worth Star Telegram, <http://www.star-telegram.com/2014/02/17/5576577/fort-worth-watering-restrictions.html>.

**Q: Why does it seem like my water bill is still pretty high?**

A: The average residential water bill in Wichita Falls (water only, not trash, stormwater fee, etc.) is currently between \$28 and \$46 per month. This maintains three lakes that supply our water, several pump stations and pipelines to move lake water to the City's two treatment plants, the actual treatment of the water to state and federal standards, the maintenance of hundreds of miles of distribution system pipeline and for the meter reading and billing to 35,000 customers.

According to JD Power and Associates, the average monthly cell phone bill for an individual (in 2012) was \$71. They further reported that for a family of four with smart phones, their total cell phone bill can easily top \$200/month. According to Consumer Reports, the average monthly Cable TV bill in 2014 is more than \$120. Natural gas and electricity prices also tend to be higher than a monthly water bill. When compared to these other common fees water really is one of the most economical products we use.

**Q: How do I read my water bill?**

A: The bill you receive indicates the previous and current meter reading. The difference between this numbers yields the consumption, or Units. Each Unit equals 748 gallons.

**Q: What is a CCF?**

A: A CCF is 100 cubic feet of water or 748 gallons, also called a Unit.

**Q: Why doesn't the City use gallons instead of units?**

A: The billing system is set up to use cubic feet. To convert the system to gallons would require all meters to be changed and the billing system to be replaced.

## 5. Searching for other water sources

**Q: Did the City wait too long to start looking for more water?**

A: The City began taking action to shore up the water supply during the last drought in 1999 and 2000. The City constructed the Microfiltration/Reverse Osmosis plant, which enable us to bring Lake Kemp online as a water source, providing an additional 10 million gallons of water per day. Without this supply the impacts of this drought would have been much more dramatic. The City also began pursuing both of the Reuse Projects in April of 2012 with lake levels just slightly under 60% capacity or Stage 1 of the drought plan. The City did not wait too long to begin the search for additional supplies and will continue to search for additional water sources.

## 6. Lake Ringgold

**Q: Is the City still looking at building Lake Ringgold?**

A: Yes. This project will cost at least \$350 million, and take fifteen to twenty years to build due to significant requirements from state and federal agencies.

## 7. Lake Wichita

**Q: Why didn't the City dredge Lake Wichita when the Corp of Engineers or highway contractors offered to do it for free?**

A: Neither the Corp of Engineers or a highway contractor has ever offered to dredge Lake Wichita for free. The City also does not use the lake as water source.

**Q: Why doesn't the City use Lake Wichita as a water source?**

A: Lake Wichita is also only 1/60<sup>th</sup> the size of Lake Arrowhead. If used as a water source under peak demand conditions the lake would be empty in 36 days. Additionally, the water in Lake Wichita comes from Lake Kemp, so the water would be too salty to use unless it was run through the RO (Reverse Osmosis) Plant.

**Q: What is the current cost to dredge Lake Wichita to make it a viable water source?**

A: Dredging is extremely expensive. Current estimates range from \$75 to \$90 million. There are cheaper options available to increase our water supply such as a reuse program.

**Q: Why isn't the City using its own heavy equipment on Lake Wichita right now while it's low?**

A: Dredging operations in the State of Texas are permitted through the Corp of Engineers. It would take six to nine months to get the permits required to begin dredging. The dredged material is required to be tested for contaminants. If contaminants are found, the material must be disposed of at a permitted site approved by the Corp. The lake is also not used as a water source and dredging for recreational purposes is not financially feasible at this time.

## 8. Castaway Cove Water Park

**Q: How much water does Castaway Cove use?**

A: Castaway Cove Water Park uses less water than a standard hotel and less than most car washes. The annual consumption of water at the park is less than 3/100 of one percent of the total annual water use in the City. Like a home pool, the water is recirculated and filtered. During the winter months the pools are kept full to reduce water use. As with any pool or body of water, there is evaporation loss, especially during hot or windy days. The park has turned off various sprays to reduce water loss due to evaporation and irrigation (watering landscaping) to comply with City's restrictions.

## 9. Water Fines

**Q: Why are the fines for water violations so much and who gets all the money?**

A: The fines are designed to discourage discretionary water use, such as watering of lawns, so citizens have enough water for health and daily living. The city only receives a portion of a fine. The State of Texas mandates that \$64 of every fine be paid to the State.

#### 10. Water Resources Commission

Q: What is the Water Resources Commission and what do they do?

A: The Water Resources Commission is a group of citizen volunteers who review the City's Conservation and Drought Plans and make appropriate recommendations to the City Council for changes.

Q: I thought the City Council was making all water restriction decisions?

A: The Water Resources Commission is a sub-committee of the City Council. The commission is responsible for reviewing all pertinent data and making appropriate recommendations for City Council action.

#### 10. Preparation for a drought

Q: Why did this water shortage happen?

A: The decrease in lake levels is the result of two years of rainfall that is more than 24 inches below normal and extreme temperatures of 150 days over 100 degrees. However, even after two years of severe drought, the reservoir capacity is near 40% so the Water Conservation Plan and Drought Contingency Plan have been effective. These plans are updated every 5 years and submitted to the State of Texas for approval. The City updated the latest plan in 2008. This plan included several new innovations to make it more effective (taking into account lessons that were learned from the drought of 1999-2000) and raised the trigger levels by 10%.